REMARKS

Applicants request a further reconsideration of merits of art applied to present claims.

The present invention relates to injection molded ("I/M") containers having a desirable balance of i) stiffness at high temperatures and ii) excellent drop strength.

The containers of this invention are made with a very specific type of polyethylene. The polyethylene is a copolymer having a very high density (from 0.950 to 0.955 g/cc).

In addition, and more significantly, the polyethylene has a narrow molecular weight distribution of from 2.2 to 2.8. This type of copolymer may be prepared in a dual reactor solution polymerization process (as noted at paragraph (0028) of the present published application).

Most importantly, the containers of this invention are prepared without a low density "impact modifier". It is well known to improve the impact properties of high density resins by blending them with a low density polymer. However, this blending step is expensive. The present invention eliminates the need for this low density impact modifier.

Claims 1-3 were rejected under 35 USC 103(a) as being unpatentable over USP 5,804,660 (hereinafter Whetten et al.) in view of USP 5,747,594 (hereinafter de Groot et al.).

Whetten et al. disclose I/M containers which are made with a polymer blend. The blends of Whetten et al. must contain at least two components, namely:

1) from 75 to 99 weight % of polyolefins which are impact modified ("component A") (see column 9, line 17 and claim 1) and;

2) from 1 to 25 weight % of a polymer having a low density (as defined by the claims, this polymer must have a density of from 0.85 to 0.91 g/cc – i.e. it is a low density copolymer). For convenience, this polymer is sometimes referred to hereinafter as the "Whetten et al. impact modifier".

It is well known to those skilled in the art that the impact properties of I/M resins may be improved by the addition of a low density polymer, (and this may be confirmed by a review of the teachings of Whetten et al. and the references cited therein).

The blends of Whetten et al. contain a very specific type low density polymer as the impact modifier. In particular, the low density polymer used by Whetten et al. must be a "homogeneous" copolymer having a defined "SCBDI", a single melting point, "no measurable high density fraction" and a low density (of from "0.83 g/cc to 0.91 g/cc") – see claim 1. Thus, applicants respectfully submit that Whetten et al. disclose the impact modification of an I/M resin using a specific type of low density polymer (i.e. the "Whetten et al. impact modifier" is a low density polymer).

The examiner made the following observations about the impact modifier: "Applicant further argues that the impact modifier must have a very low density. However, the examiner is unable to find support for applicants argument in the disclosure of Whetten".

In response, applicants respectfully direct the examiner's attention to:

1) Claim 1 of Whetten et al. (which specifies that component B must have a density of from 0.85 to 0.91 g/cc);

2) Column 6, lines 32-45 (which describe the amount of the "homogeneous linear" polymer as being between 1 and 25% and the density as being from a low of 0.865 g/cc to "no higher than about 0.92 g/cc"); and

3) The Examples of Whetten et al. (which disclose the use of "substantially linear" impact modifiers having densities between 0.885 and 0.913 g/cc).

Thus, in summary, applicants respectfully submit that the specification of Whetten et al. clearly requires the use of a low density polymer as an impact modifier.

The present invention does not contain a low density impact modifier.

The examiner also noted: "Applicants argue that Whetten et al. encompasses a narrow molecular weight distribution".

Applicants respectfully disagree. Applicants did not argue that Whetten et al. encompasses a narrow molecular weight distribution. Instead, applicants noted that the "Whetten et al. impact modifier" has a narrow molecular weight distribution. In fact, as previously noted, the examiner's reference to column 8 (lines 60-62) of Whetten et al. is directed to "linear and substantially linear ethylene – alpha olefin polymers". These "substantially linear" polymers are the Whetten et al. impact modifiers (see Claim 1 and column 9, lines 16-23). That is – it is the "Whetten et al. impact modifier" which has the molecular weight distribution of from 1.5 to 2.5.

Whetten et al. make no such teaching about "component A" (i.e. the "polyolefins which are impact modified" – see column 9, starting at line 17). In

contrast (and as previously argued by applicants) Whetten et al. might be said to teach away from the narrow molecular weight distribution of the compositions of this invention, given the comparatively broad molecular weight distributions of the composition in the examples of Whetten et al. Alternatively stated: Whetten et al. do not teach or suggest that the "component A" of their compositions (i.e. the component to be impact modified) should have a narrow molecular weight distribution (or, more particularly, that the overall composition should have a molecular weight distribution of from 2.2 to 2.8).

Thus, in summary, the present invention relates to I/M containers which are made from polyethylene having a comparatively narrow molecular weight distribution of from 2.2 to 2.8 and the present invention is made without a low density impact modifier. Whetten et al. do not teach or suggest such I/M containers. Most significantly, the technology taught by Whetten et al. must contain a low density impact modifier (see component B of claim 1, which must have a density of from 0.85 to 0.91 g/cc).

Accordingly, applicants respectfully submit that Whetten et al. do not teach or suggest the present invention. The I/M containers of the present invention must have a comparatively narrow molecular weight distribution (of from 2.2 to 2.8) and are made without a low density impact modifier. Whetten et al. make no such teachings. Therefore, applicants respectfully submit that the examiner's allegation that the "prior art products are identical or substantially identical" is not supported by objective evidence.

In addition, the I/M containers of the present invention must also be made from copolymers which have a very narrowly defined density range of from 0.950 to 0.960 g/cc.

Applicants have provided evidence that the I/M containers of the present invention have an excellent combination of Vicat softening point (or, alternatively stated, high stiffness at elevated temperatures) and good drop strength.

Applicants respectfully submit that the invention defined by present claims 1-3 is in no way taught or suggested by Whetten et al.

The present claims were also rejected under 35 USC 103(a) in view of a combination of the teachings of Whetten et al. in view of de Groot et al.

The compositions taught by de Groot et al. contain two comparatively low density olefin polymers:

Component (A) – which has a density of from 0.850 to 0.920 g/cc; and

Component (B) – which has a density of from 0.890 to 0.942 g/cc.

It will be recognized by those skilled in the art that the use of a low density polymer as an impact modifier is well known to improve the impact resistance of a polyolefin composition. However, the use of the low density polymer as an impact modifier also reduces the Vicat softening point. This is discussed by de Groot et al. at column 1, lines 54-65. In contrast, the I/M containers of the present invention do not contain a low density impact modifier. Moreover, the I/M containers of the present invention are prepared with a high density polymer composition (of from 0.950 to 0.955 g/cc) and have a very high Vicat softening point.

Applicants respectfully submit that the teachings of de Groot el al. in no way suggest the present invention. Moreover, a combination of the teachings of de Groot et al. with Whetten et al. would in no way lead to the high density compositions which are used to make the I/M containers of the present invention. To the contrary, applicants respectfully submit that the teachings of de Groot et al. highlight the advantages of comparatively low density composition (and thus teach away from the present invention).

In summary, applicants respectfully submit that the present claims are in condition for Allowance and such Allowance is respectfully submitted.

Respectfully submitted,

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